**FIGURE 1**

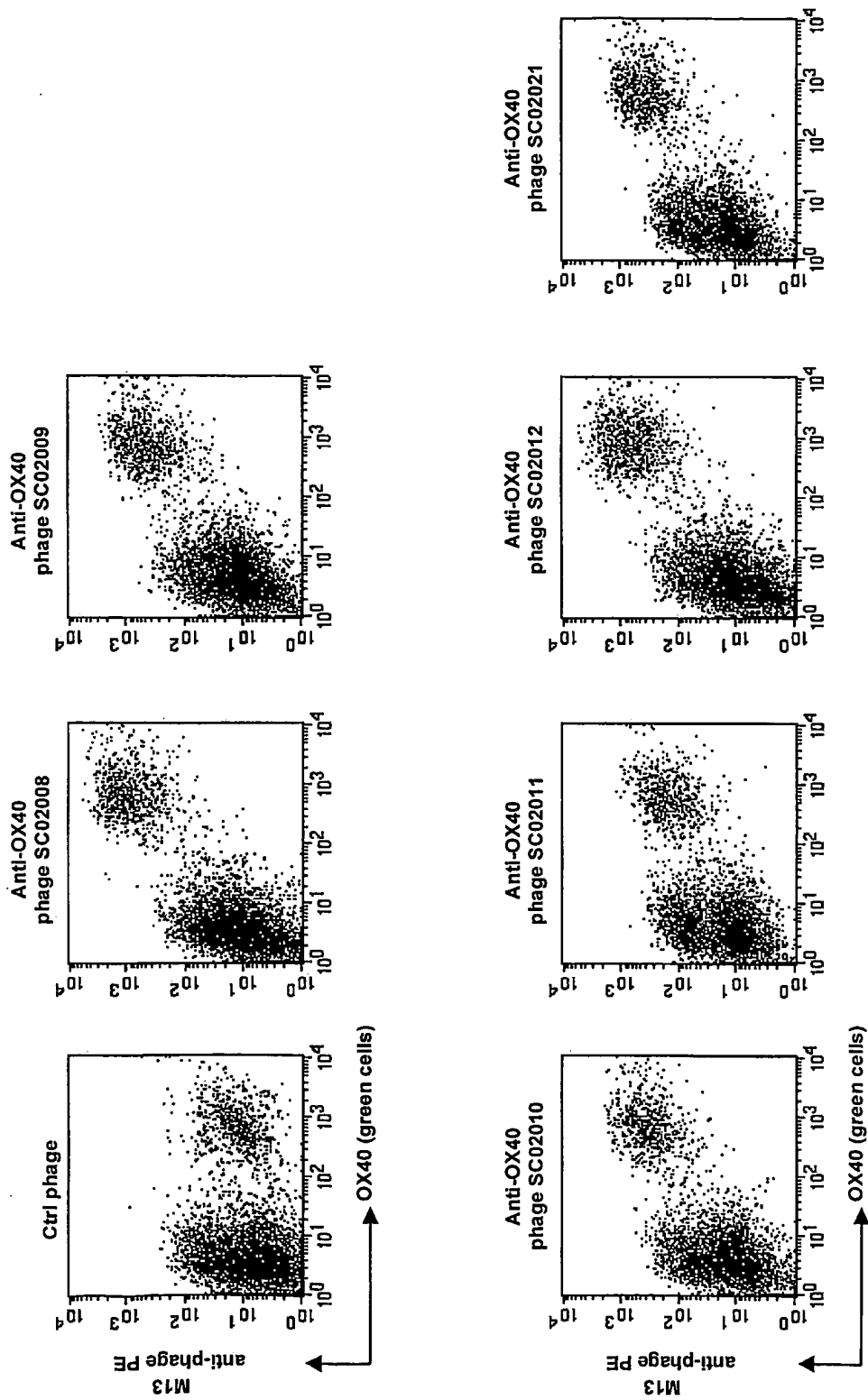


Figure 2

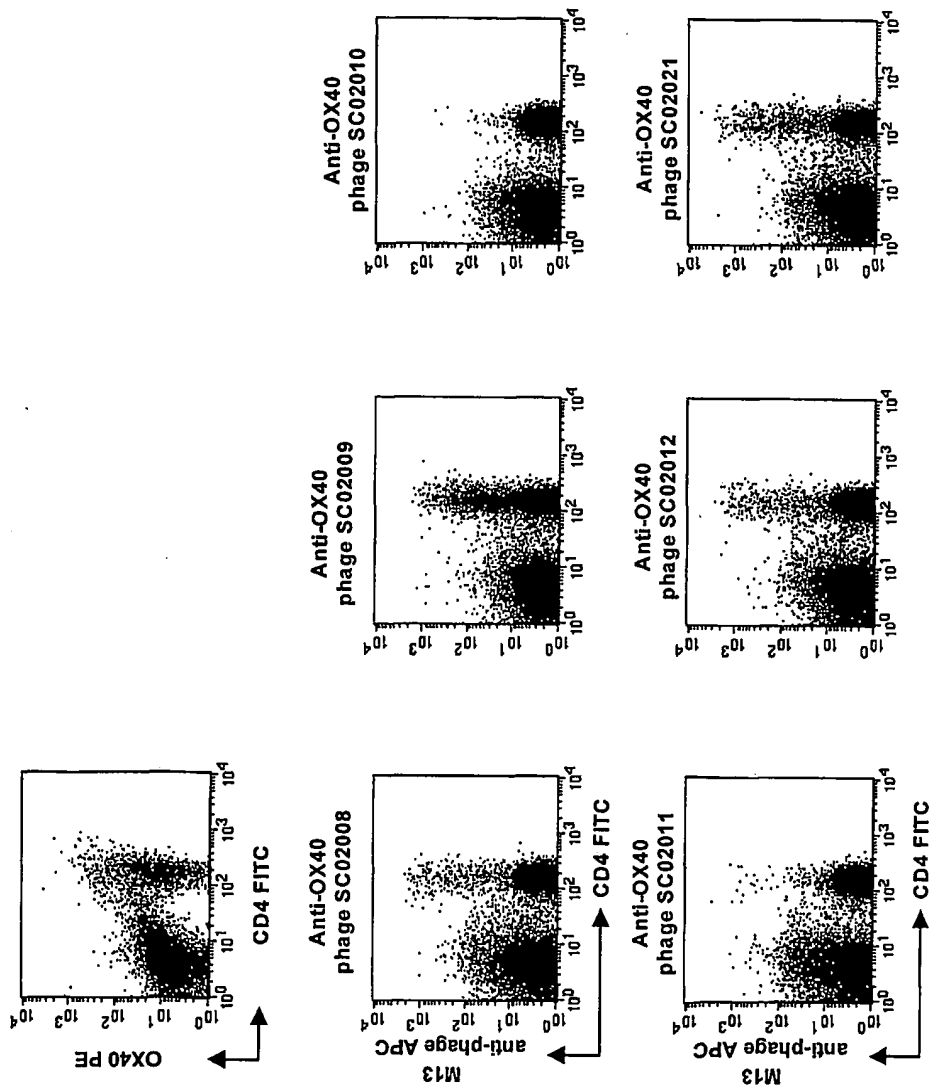


Figure 3A

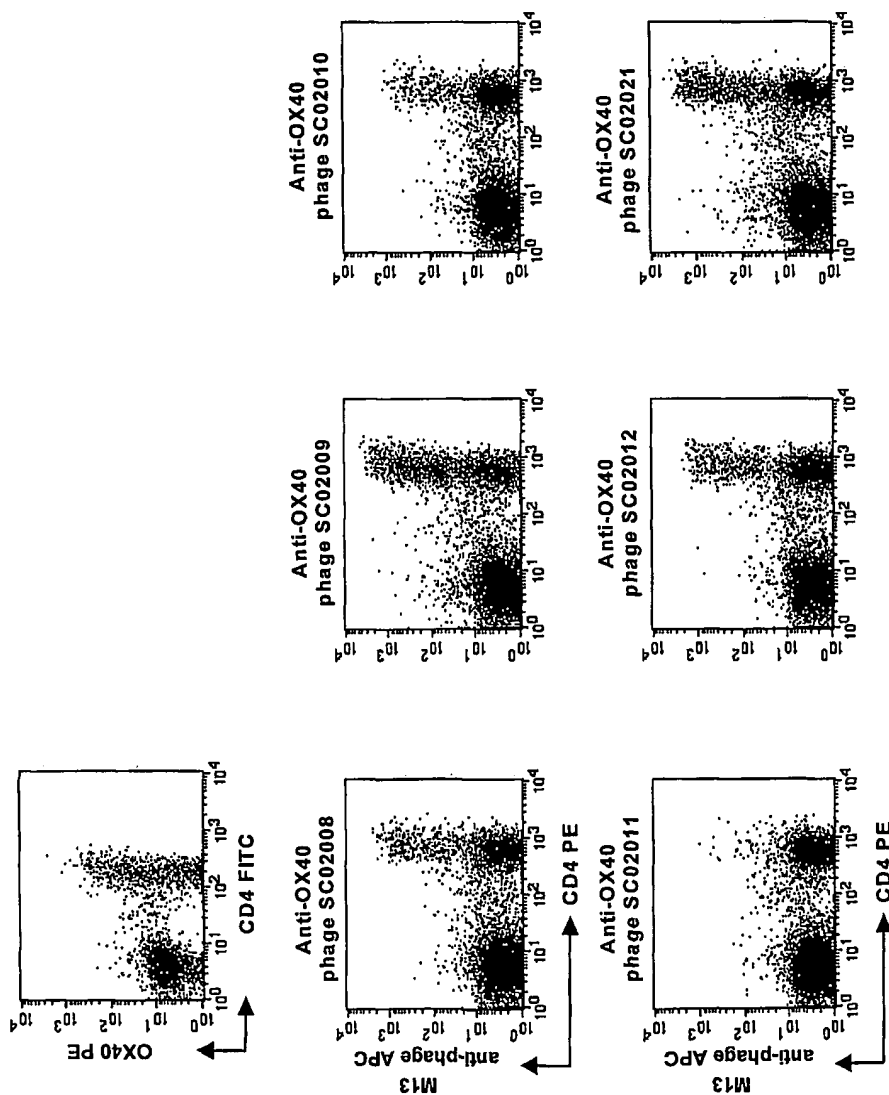


Figure 3B

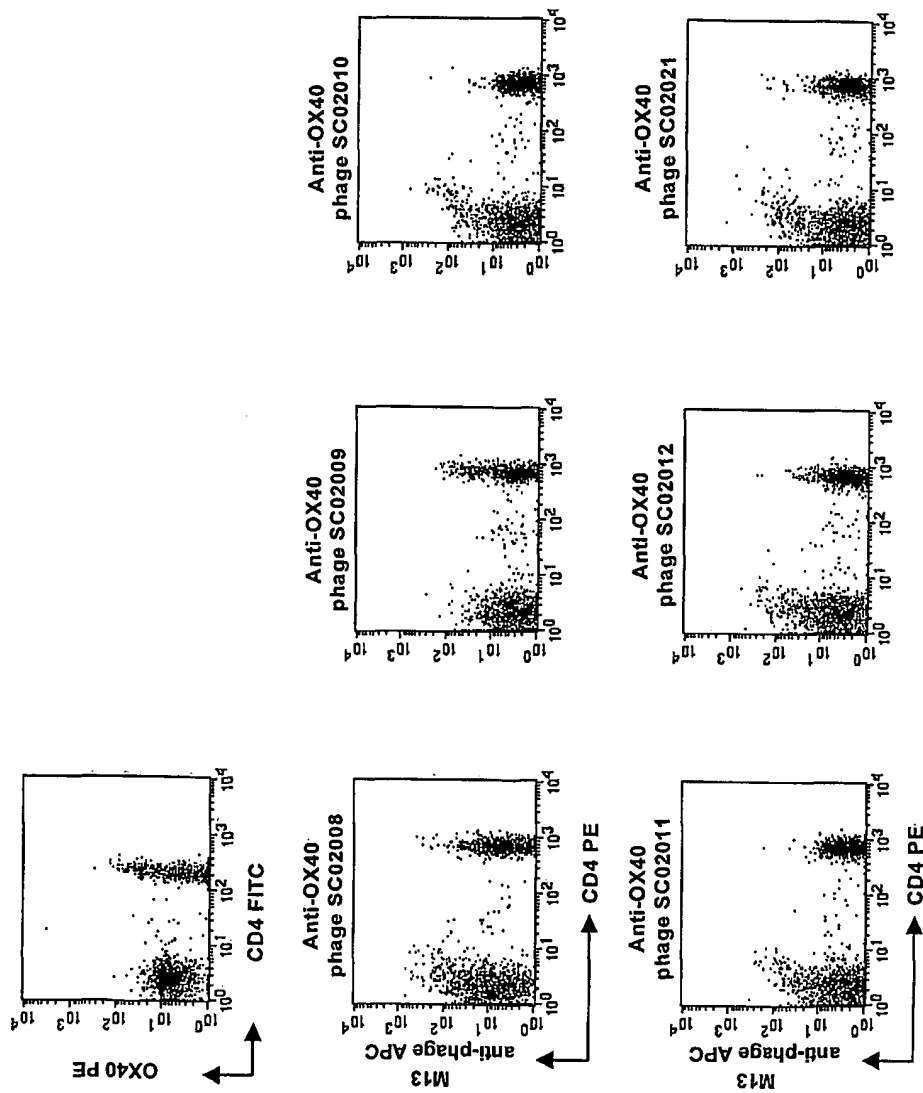


Figure 3C

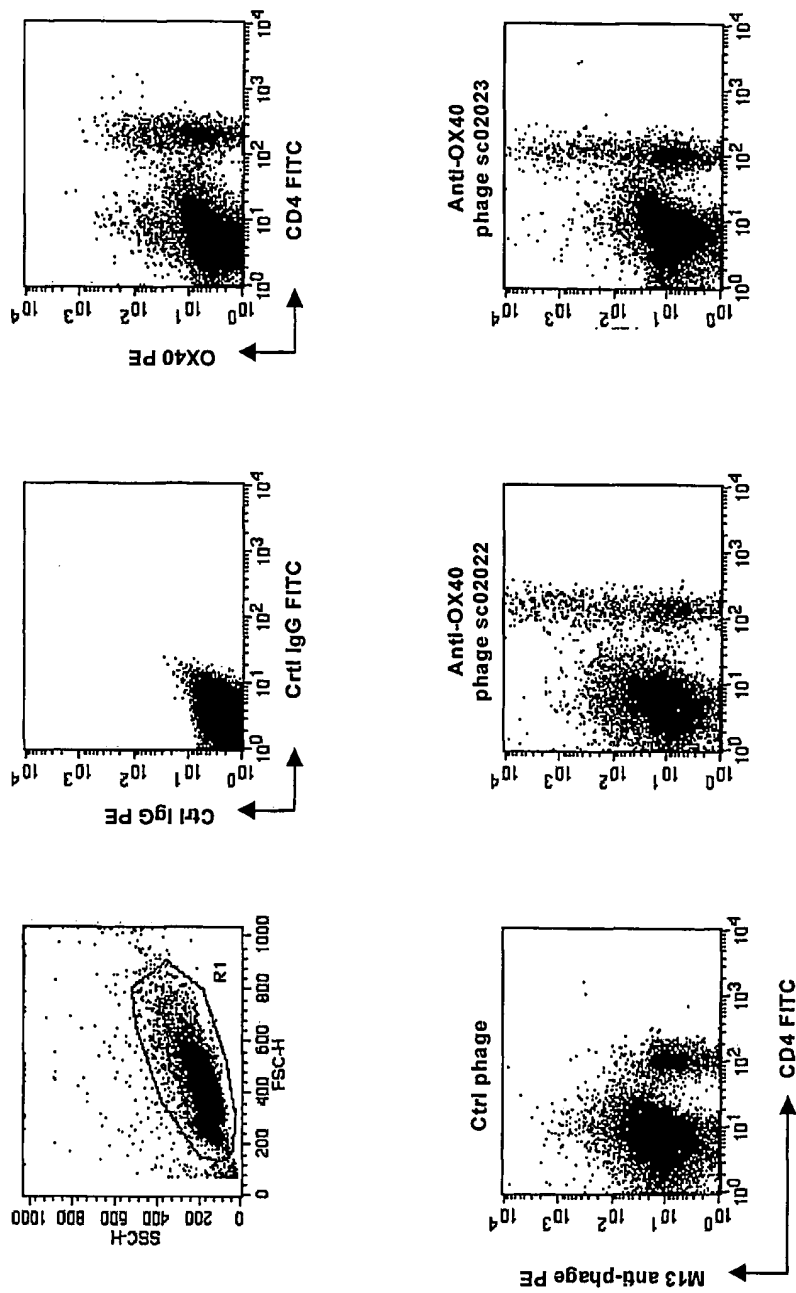


Figure 4A

## Perc6 OX40 transfectant

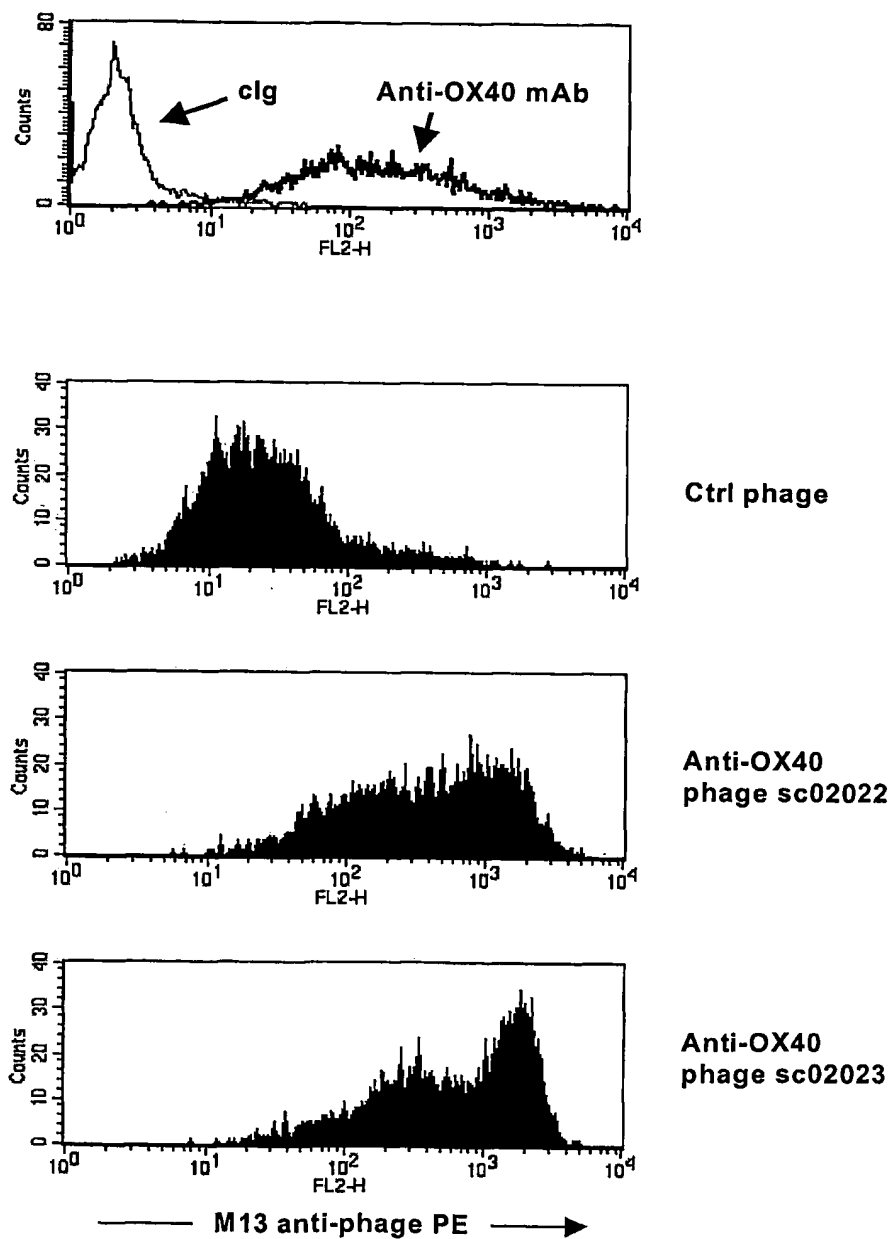


Figure 4B

## Anti-human OX40R scFv SC02008

NcoI  
-----

143           M A E V Q L V E S G G G L V Q P G G S L R  
          CCATGGCTGAGGTGCAGCTGGTGGAGTCTGGGGGAGGCTTGGTCCAGCCTGGAGGGTCCCTGAG

214           L S C A A S G F T F S N Y T M N W V R Q A P G  
          ACTCTCCTGTGCAGCCTCTGGATTACCTTTAGCAACTACACGATGAACTGGGTCCGCCAGGCGCCCGGGA

285           K G L E W V S A I S G S G G S T Y Y A D S V K G  
          AGGGGCTGGAGTGGGTCTCAGCTATTAGTGGTAGTGGTAGCACATACTACGCAGACTCCGTGAAGGGC

356           R F T I S R D N S K N T L Y L Q M N S L R A E D  
          CGGTTCACCATCTCCAGAGACAATTCCAAGAACACGCTGTATCTGCAAATGAACAGCCTGAGAGCCGAGGA

427           T A V Y Y C A K D R Y S Q V H Y A L D Y W G Q  
          CACGGCCGTGTATTACTGTGCCAAAGACCGCTACTCCAGGTGCACTACGCGTTGGATTACTGGGGCCAGG

498           G T L V T V L E G T G G S G G T G S G T G T S E  
          GCACCCTGGTGACCGTGCTCGAGGGTACCGGAGGTTCGGCGGAACCGGGTCTGGGACTGGTACGAGCGAG

569           L D I Q M T Q S P D S L P V T P G E P A S I S C  
          CTCGACATCCAGATGACGCAGTCTCCAGACTCACTGCCCGTCACCCCTGGAGAGCCGGCCTCCATCTCCTG

640           R S S Q S L L H S N G Y N Y L D W Y L Q K A G  
          CAGGTCTAGTCAGAGCCTCCTGCATAGTAATGGATACAACATTTGGATTGGTACCTGCAGAAGGCAGGGC

711           Q S P Q L L I Y L G S N R A S G V P D R F S G S  
          AGTCTCCACAGCTCCTGATCTATTGGGTTCTAATCGGGCCTCCGGGGTCCCTGACAGGTTCA GTGGCAGT

782           G S G T D F T L K I S R V E A E D V G V Y Y C Q  
          GGATCAGGCACAGATTTTACACTGAAATCAGCAGAGTGGAGGCTGAGGATGTTGGGGTTTATTACTGCCA

NotI  
-----

853           Q Y Y N H P T T F G Q G T K L E I K R A A  
          GCAGTACTACAACCACCCGACGACCTTCGGCCAGGGCACCAAACCTGGAATCAAACGCGCGGCCGC

Figure 5



## Anti-human OX40R scFv SC02009

NcoI  
~~~~~

143 M A E V Q L V E S G G G L  
CCATGGCTGAGGTGCAGCTGGTGGAGTCTGGGGGAGGCTTG

214 V Q P G G S L R L S C A A S G F T F S G Y S M N  
GTCCAGCCTGGGGGTCCCTGAGACTCTCCTGTGCAGCCTCTGGATTCACCTTCAGCGGCTACTCTATGAA

285 W V R Q A P G K G L E W V G R T R N K A N S Y  
CTGGGTCCGCCAGGCGCCCGGAAGGGGCTGGAGTGGGTGGCCGTACTAGAAACAAAGCTAACAGTTACA

356 T T E Y A A S V K G R F T I S R D D S K N S L Y  
CCACAGAATACGCCGCTCTGTGAAAGGCAGATTACCATCTCAAGAGATGATTCAAAGAACTCACTGTAT

427 L Q M N S L R A E D T A V Y Y C A K D R Y V N T  
CTGCAAATGAACAGTCTGAGAGCCGAGGACACAGCCGTGTATTACTGTGCCAAAGACCGCTACGTCAACAC

498 S N A F D Y W G Q G T L V T V L E G T G G S G  
GTCGAACGCGTTCGATTACTGGGGCCAGGGCACCTGGTGACCGTGCTCGAGGGTACCGGAGGTTCCGGCG

569 G T G S G T G T S E L D I Q M T Q S P D S L P V  
GAACCGGGTCTGGGACTGGTACGAGCGAGCTCGACATCCAGATGACACAGTCTCCAGACTCACTGCCCGTC

640 T P G E P A S I S C R S S Q S L L H S N G Y N Y  
ACCCCTGGAGAGCCGGCCTCCATCTCCTGCAGATCTAGTCAGAGCCTCCTGCATAGTAATGGATACAATA

711 L D W Y L Q K P G Q S P Q L L I Y L G S N R A  
TTTGGATTGGTACCTGCAGAAGCCAGGGCAGTCTCCACAGCTCCTGATCTATTGGGTTCTAATCGGGCCT

782 S G V P D R F S G S G S G T D F T L K I S R V E  
CCGGGGTCCCTGACAGGTTCACTGGCAGTGGATCAGGCACAGATTTTACACTGAAAATCAGCAGAGTGGAG

853 A H H V G V Y Y C Q Q Y P L G P P T F G Q G T K  
GCTCACCATGTTGGGTTTATTACTGCCAGCAGTACCCGCTGGGCCCCGCCACCTTCGGCCAGGGCACCAA

NotI  
~~~~~

924 L E I K R A A  
ACTGGAAATCAAACGCGCGCCCGC

Figure 6

## Anti-human OX40R scFv SC02010

```

                                NcoI
                                ~~~~~
                                M A E V Q L V
72                                CCATGGCTGAGGTGCAGCTGGTGG
                                ~~~~~
143  E S G G G L I Q P G G S L R L S C A A S G F T F
    AGTCTGGGGGAGGCTTGATCCAGCCTGGGGGGTCCCTGAGACTCTCCTGTGCAGCCTCTGGATTACCTTC
    ~~~~~
214  S G Y P M N W V R Q A P G K G L E W V A V I S Y
    AGCGGCTACCTATGAACTGGGTCCGCCAGGCGCCCGGAAGGGGCTGGAGTGGGTGGCAGTTATATCATA
    ~~~~~
285  D G S N K Y Y A D S V K G R F T I S R D N S K
    TGATGGAAGTAATAAATACTACGCAGACTCCGTGAAGGGCCGATTACCATCTCCAGAGACAATTCCAAGA
    ~~~~~
356  N T L Y L Q M N S L R A E D T A V Y Y C A R D M
    ACACGCTGTATCTGCAATGAACAGCCTGAGAGCTGAGGACACAGCCGTGTATTACTGTGCAAGAGACATG
    ~~~~~
427  S G F H E F D Y W G Q G T L V T V L E G T G G S
    TCCGGCTTCCACGAGTTCGATTACTGGGGCCAGGGCACCTGGTGACCGTGCTCGAGGGTACCGGAGGTC
    ~~~~~
498  G G T G S G T G T S E L T Q S P S S L S A S V
    CGGCGGAACCGGCTCTGGGACTGGTACGAGCGAGCTCACCCAGTCTCCATCCTCCCTGTCTGCATCTGTAG
    ~~~~~
569  G D R V T I T C R A S Q S I S S Y L N W Y Q Q K
    GAGACAGAGTCACCATCACTTGCCGGGCAAGTCAGAGCATTAGCAGCTACTTAAATTGGTATCAGCAGAAA
    ~~~~~
640  P G K A P K L L I Y A A S S L Q S G V P S R F S
    CCAGGGAAGCCCTAAGCTCCTGATCTATGCTGCATCCAGTTTGCAAAGTGGGGTCCCATCAAGGTTTCAG
    ~~~~~
711  G S G S G T D F T L T I S S L Q P E D F A T Y
    TGGCAGTGGATCTGGGACAGATTTCACTCTCACCATCAGCAGTCTGCAACCTGAAGATTTTGCAACTTACT
    ~~~~~
                                NotI
                                ~~~~~
782  Y C Q Q S Y S T P P T F G Q G T K V E I K R A A
    ACTGTCAACAGAGTTACAGTACCCCTCCAACGTTCCGGCAAGGGACCAAGGTGGAGATCAAACGTGCGGCC
853  GC

```

Figure 7

## Anti-human OX40R scFv SC02011

NcoI  
~~~~~

143                   M A E V Q L V E S G G G V V Q P G R  
                  CCATGGCTGAGGTGCAGCTGGTGGAGTCTGGGGGAGGCGTGGTCCAGCCTGGGAGGT

214                   S L R L S C A A S G F T F S D Y T M N W V R Q A  
                  CCCTGAGACTCTCCTGTGCAGCCTCTGGATTACCTTCAGCGACTACACGATGAACTGGGTCCGCCAGGCG

285                   P G K G L E W V S S I S G G S T Y Y A D S R K G  
                  CCCGGAAGGGGCTGGAGTGGGTCTCATCCATTAGTGGTGGTAGCACATACTACGCAGACTCCAGGAAGGG

356                   R F T I S R D N S K N T L Y L Q M N N L R A E  
                  CAGATTCACCATCTCCAGAGACAATCCAAGAACACGCTGTATCTTCAAATGAACAACCTGAGAGCTGAGG

427                   D T A V Y Y C A R D R Y F R Q Q N A F D Y W G Q  
                  ACACGGCCGTGTATTACTGTGCAAGAGACCGCTACTTCAGGCAGCAGAACGCGTTCGATTACTGGGGCCAG

498                   G T L V T V L E G T G G S G G T G S G T G T S E  
                  GGCACCCCTGGTGACCGTGCTCGAGGGTACCGGAGGTTCCGGCGGAACCGGGTCTGGGACTGGTACGAGCGA

569                   L D I Q M T Q S P V T L P V T P G E P A S I S  
                  GCTCGACATCCAGATGACTCAGTCTCCAGTCACCCCTGCCCGTCACCCCTGGAGAGCCGGCCTCCATCTCCT

640                   C R S S Q S L L H S N G Y N Y L D W Y L Q K P G  
                  GCAGGTCTAGTCAGAGCCTCCTGCATAGTAATGGATACAACTATTTGGATTGGTACCTGCAGAAGCCAGGG

711                   Q S P Q L L I Y L G S N R A S G V P D R F S G S  
                  CAGTCTCCACAGCTCCTGATCTATTTGGGTTCTAATCGGGCCTCCGGGGTCCCTGACAGGTTCACTGGCAG

782                   G S G T D F T L K I S R V E A E D V G V Y Y C  
                  TGGATCAGGCACAGATTTTACACTGAAAATCAGCAGAGTGGAGGCTGAGGATGTTGGGGTTTATTACTGCC

NotI  
~~~~~

853                   Q Q Y L T A P P T F G Q G T K L E I K R A A  
                  AGCAGTACCTCACGGCCCCGCCACCTTCGGCCAGGGCACCAACTGGAAATCAAACGCGGGCCGC

Figure 8

## Anti-human OX40R scFv SC02012

```

                                NcoI
                                ~~~~~
                                M A E V Q L V E
72                                CCATGGCTGAAGTCAGCTGGTGGG

    S G G G L V K P G G S L R L S C A A S G F T F S
    AAGCGGCGGCGGCCTGGTGAAGCCGGGTGGCAGCCTGCGCCTGAGCTGCGCCGCTAGCGGCTTCACCTTTA

    N D S M N W M R Q A P G K G L E W V A N I N Q
214    GCAACGACTCGATGAACTGGATGCGCCAGGCCCGGGCAAAGGCCTCGAATGGGTGGCCAATATCAATCAG

    D G N E K Y Y A D S V K G R F T I S R D N S K N
285    GATGGCAACGAAAAATATTACGCCGACTCTGTCAAAGGCCGCTTCACCATCAGTCGCGATAACTCCAAAAA

    S L Y L Q M N S L R D E D T A L Y Y C A R A R
356    CTCCCTGTACCTGCAGATGAACAGCCTGCGCGACGAAGATACCGCCCTGTACTACTGCGCACGCGCCCGCG

    A A G T I F D Y W G Q G T L V T V L E G T G G S
427    CCGCCGGCACCATCTTCGATTACTGGGGCCAGGGCACCCTGGTGACCGTGCTCGAGGGTACCGGAGGTTCC

    G G T G S G T G T S E L D I Q M T Q S P S S L S
498    GGCGGAACCGGGTCTGGGACTGGTACGAGCGAGCTCGATATCCAGATGACCCAGAGCCCGAGTTCCCTGAG

    A S V G D R V T I T C R A S Q N V S N Y L T W
569    CGCCTCCGTGGGCGACCGCGTGACCATCACCTGCCGCGCCAGCCAGAACGTCAGCAACTACCTGACCTGGT

    Y Q Q K P G K A G K L L I Y A A S S L Q S G V P
640    ACCAGCAGAAACCGGGCAAGGCTGGCAACTGCTGATTACGCCGCCAGCAGCCTCCAAAGCGGCGTGCCG

    S R F S G S G S G T D F T L T I S S L Q P E D F
711    TCTAGATTCAGTGGCTCCGGCTCCGGAACCGATTTACCCCTGACCATCAGCAGCCTGCAGCCGGAAGATTT

    A T Y Y C Q Q S Y F N P A T F G Q G T K L E I
782    CGCTACCTACTATTGTCAGCAGTCCTACTTCAACCCGGCGACCTTCGGCCAGGGCACCAAACTGGAAATCA

                                NotI
                                ~~~~~
                                K R A A
853    AACGCGCGGCCGC

```

Figure 9

## Anti-human OX40R scFv SC02021

NcoI  
~~~~~

143 M A E V Q L V E S G G G L  
CCATGGCTGAGGTGCAGCTGGTGGAGTCTGGGGGAGGCTTG

214 V Q P R G S L R L S C A A S G F T F S S Y A M N  
GTACAGCCTAGGGGTCCCTGAGACTCTCCTGTGCAGCCTCTGGATTACCTTTAGCAGCTACGCGATGAA

285 W V R Q A P G K G L E W V A V I S Y D G S N K  
CTGGGTCCGCCAGGCGCCCGGAAGGGGCTGGAGTGGGTGGCAGTTATATCATATGATGGAAGCAATAAAT

356 Y Y A D S V K G R F T I S R D N S K N T L Y L Q  
ACTACGCAGACTCCGTGAAGGGCCGATTCCCATCTCCAGAGACAATCCAAGAACACGCTGTATCTGCAA

427 M N S L R A E D T A V Y Y C A K D R Y I T L P N  
ATGAACAGCCTGAGAGCTGAGGACACAGCCGTGTATTACTGTGCCAAAGACCGCTACATCACGTTGCCGAA

498 A L D Y W G Q G T L V T V L E G T G G S G G T  
CGCGTTGGATTACTGGGGCCAGGGCACCTGGTGACCGTGCTCGAGGGTACCGGAGGTCCGGCGGAACCG

569 G S G T G T S E L D I Q M T Q S P V S L P V T P  
GGTCTGGGACTGGTACGAGCGAGCTCGACATCCAGATGACCCAGTCTCCAGTCTCACTGCCCGTCACCCCT

640 G E P A S I S C R S S Q S L L H S N G Y N Y L D  
GGAGAGCCGGCCTCCATCTCCTGCAGGTCTAGTCAGAGCCTCCTGCATAGTAATGGATACAACATATTTGGA

711 W Y L Q K P G Q S P Q L L I Y L G S N R A S G  
TTGGTACCTGCAGAAGCCAGGGCAGTCTCCACAGCTCCTGATCTATTGGGTTCTAATCGGGCCTCCGGGG

782 V P D R F S G S G S G T D F T L K I S R V E A E  
TCCCTGACAGGTTCACTGGCAGTGGATCAGGCACAGATTTTACACTGAAAATCAGCAGAGTGGAGGCTGAG

853 D V G V Y Y C Q Q Y K S N P P T F G Q G T K V E  
GATGTTGGGTTTATTACTGCCAGCAGTACAAGTCGAACCCGCCACCTTCGGCCAGGGCACCAAAGTGGA

NotI  
~~~~~

924 I K R A A  
AATCAAACGCGCGGCCGC

Figure 10

## Anti-human OX40R scFv SC02022

72

143

214

285

356

427

498

569

640

711

782

NotI  
~~~~~  
M A E V Q L V E S G G G  
CCATGGCCGAGGTGCAGCTGCTGGAGTCTGGGGGAGGC

L V H P G G S L R L S C A G S G F T F S S Y A M  
TTGGTACATCCTGGGGGGTCCCTGAGACTCTCCTGTGCAGGCTCTGGATTACCTTCAGTAGCTATGCTAT

H W V R Q A P G K G L E W V S A I G T G G G T  
GCACTGGGTTCGCCAGGCTCCAGGAAAAGGTCTGGAGTGGGTATCAGCTATTGGTACCGGTGGTGGCACAT

Y Y A D S V Q G R F T I S R D N A K N S L Y L Q  
ACTATGCAGACTCCGTGCAGGGCCGATTACCATCTCCAGAGACAATGCCAAGAACTCCTTGATCTTCAA

M N S L R A E D T A V Y Y C A R Y D E P L T I Y  
ATGAACAGCCTGAGAGCCGAGGACACGGCCGTGTATTACTGTGCAGATACGACGACGCCGTGACGATTTA

W F D S W G Q G T L V T V S S G G G G S G G G  
CTGGTTTGACTCCTGGGGCCAAGGTACCTGGGTACCGTCTCGAGTGGTGGAGCGGTTACAGCGGAGGTG

G S G G G G S E I E L T Q S P A T L S L S P G E  
GCTCTGGCGTGGCGGATCGGAAATTGAGCTCACACAGTCTCCAGCCACCCTGTCTTTGTCTCCAGGGGAA

R A T L S C R A S Q S V S S Y L A W Y Q Q K P G  
AGAGCCACCCTCTCCTGCAGGGCCAGTCAGAGTGTTAGCAGCTACTTAGCCTGGTACCAACAGAAACCTGG

Q A P R L L I Y D A S N R A T G I P A R F S G  
CCAGGCTCCCAGGCTCCTCATCTATGATGCATCCAACAGGGCCACTGGCATCCCAGCCAGGTTCACTGGCA

S G S G T D F T L T I S S L E P E D F A V Y Y C  
GTGGGTCTGGGACAGACTTCACTCTACCATCAGCAGCCTAGAGCCTGAAGATTTTGCAGTTTATTACTGT

NotI  
~~~~~  
Q Q R S N W P P A F G G G T K V E I K R A A  
CAGCAGCGTAGCAACTGGCCCTCCGGCTTTCGGCGGAGGGACCAAGGTGGAGATCAAAACGTGCGGCCGC

Figure 11

## Anti-human OX40R scFv SC02023

```

                                NcoI
                                -----
                                M A E V Q L V E
72                                CCATGGCCGAGGTGCAGCTGGTGGAG
                                S G G G L V H P G G S L R L S C A G S G F T F S
143    TCTGGGGGAGGCTTGGTACATCCTGGGGGGTCCCTGAGACTCTCCTGTGCAGGCTCTGGATTACCTTCAG
                                S Y A M H W V R Q A P G K G L E W V S A I G T
214    TAGCTATGCTATGCACTGGGTTCGCCAGGCTCCAGGAAAAGTCTGGAGTGGGTATCAGCTATTGGTACTG
                                G G G T Y Y A D S V M G R F T I S R D N S K N T
285    GTGGTGGCACATACTATGCAGACTCCGTGATGGGCCGGTTCACCATCTCCAGAGACAATTCCAAGAACAG
                                L Y L Q M N S L R A E D T A V Y Y C A R Y D N V
356    CTCTATCTGCAAAATGAACAGCCTGAGAGCCGAGGACACGGCCGTGTATTACTGTGCAAGATACGACAATGT
                                M G L Y W F D Y W G Q G T L V T V S S G G G G
427    GATGGGTCTTTACTGGTTTGACTACTGGGGCCAAGGTACCCTGGTCACCGTCTCGAGTGGTGGAGGCGGTT
                                S G G G G S G G G G S E I E L T Q S P A T L S L
498    CAGGCGGAGGTGGCTCTGGCGGTGGCGGATCGGAAATTGAGCTCACACAGTCTCCAGCCACCCTGTCTTTG
                                S P G E R A T L S C R A S Q S V S S Y L A W Y Q
569    TCTCCAGGGGAAAGAGCCACCCTCTCCTGCAGGGCCAGTCAGAGTGTAGCAGTACTTAGCCTGGTACCA
                                Q K P G Q A P R L L I Y D A S N R A T G I P A
640    ACAGAAACCTGGCCAGGCTCCAGGCTCCTCATCTATGATGCATCCAACAGGGCCACTGGCATCCAGCCA
                                R F S G S G S G T D F T L T I S S L E P E D F A
711    GGTTCA GTGGCAGTGGGTCTGGGACAGACTTCACTCTCACCATCAGCAGCCTAGAGCCTGAAGATTTTGA
                                V Y Y C Q Q R S N W P P A F G G G T K V E I K R
782    GTTTATTACTGTCAGCAGCGTAGCAACTGGCCTCCGGCTTTCGGCGGAGGGACCAAGGTGGAGATCAAACG
                                NotI
                                -----
                                A A
853    TGCGGCCGC

```

Figure 12

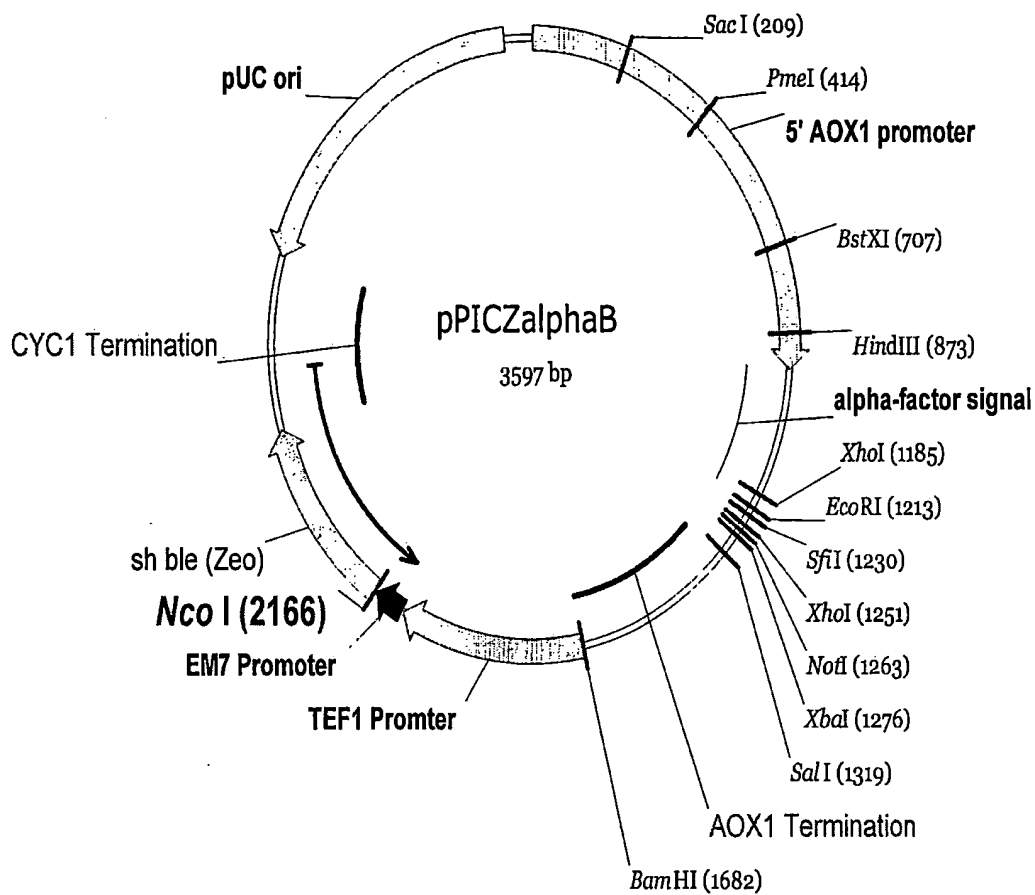


Figure 13A



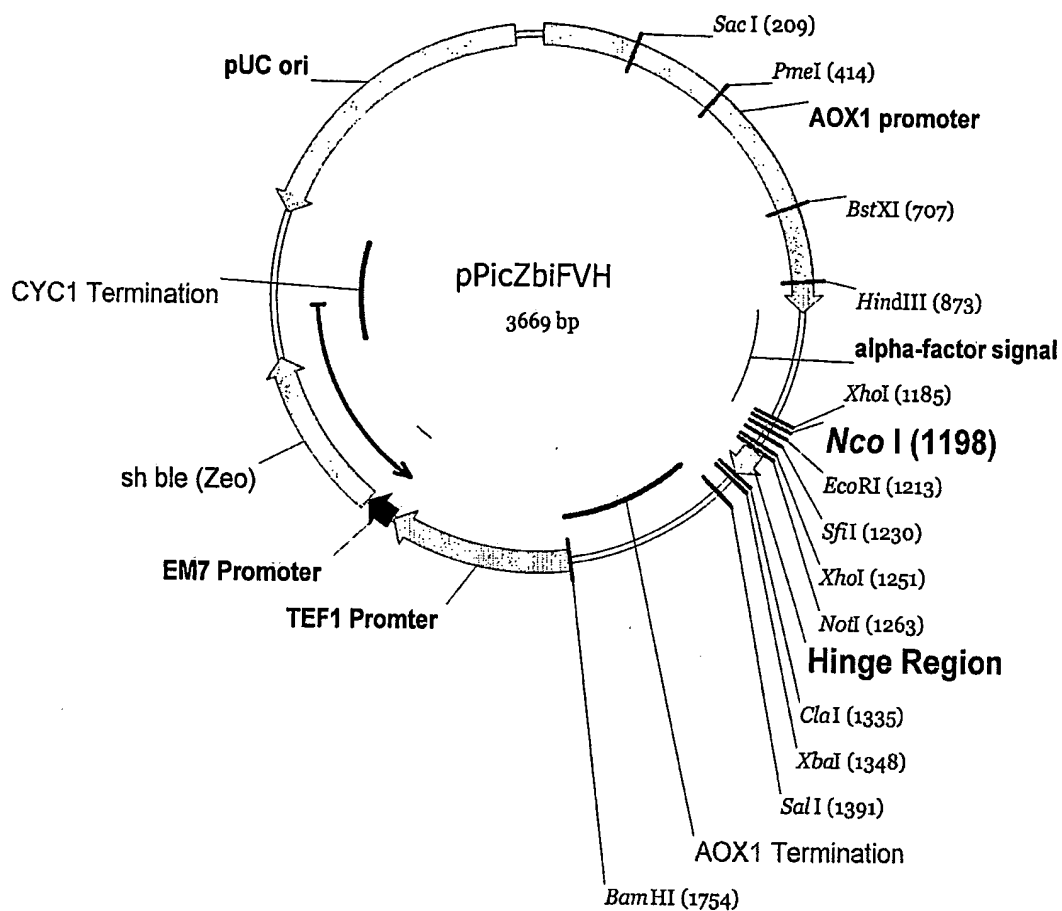
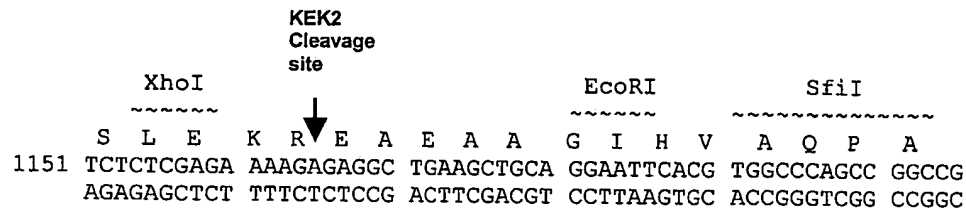
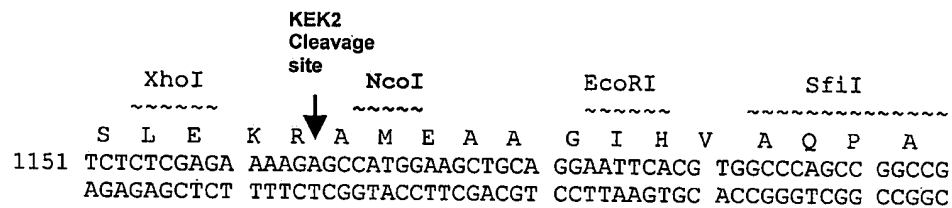


Figure 13B

## 5' Cloning site of pPicZαB



## 5' Cloning site of pPicZFVH



## synthetic hinge fragment

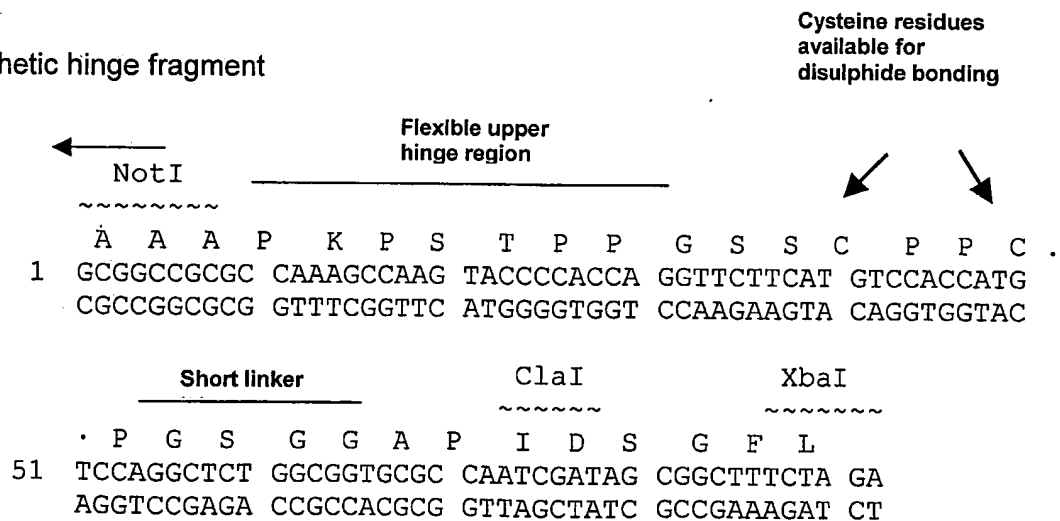


Figure 13C

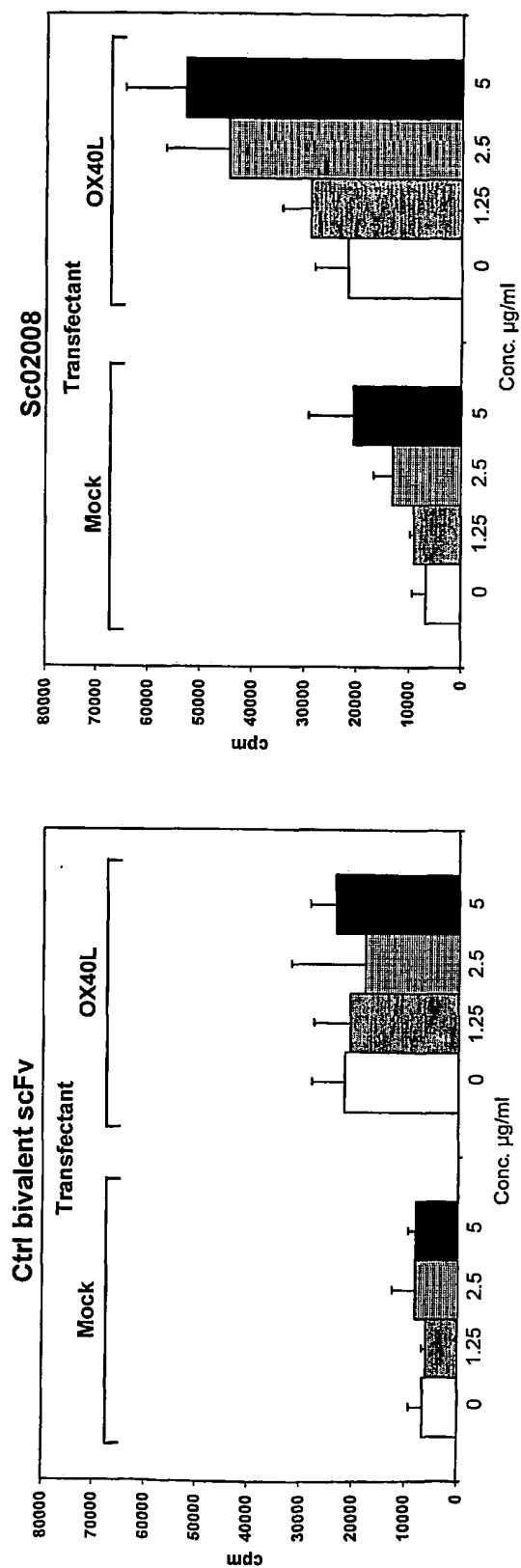


Figure 14A

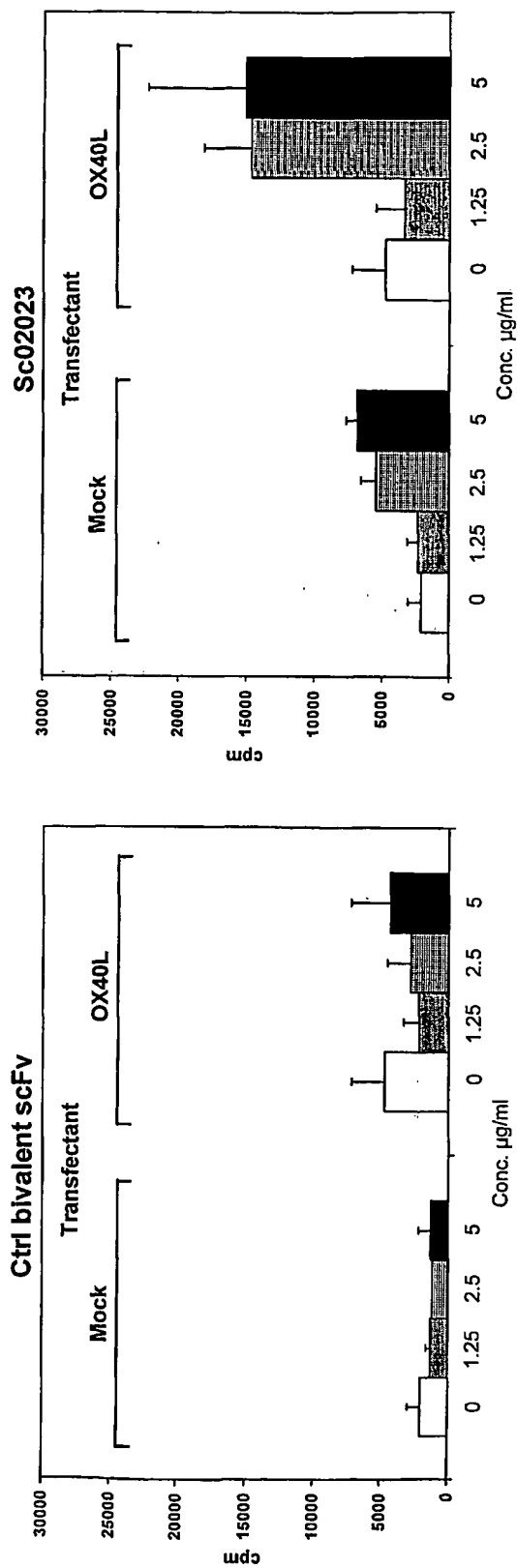


Figure 14B

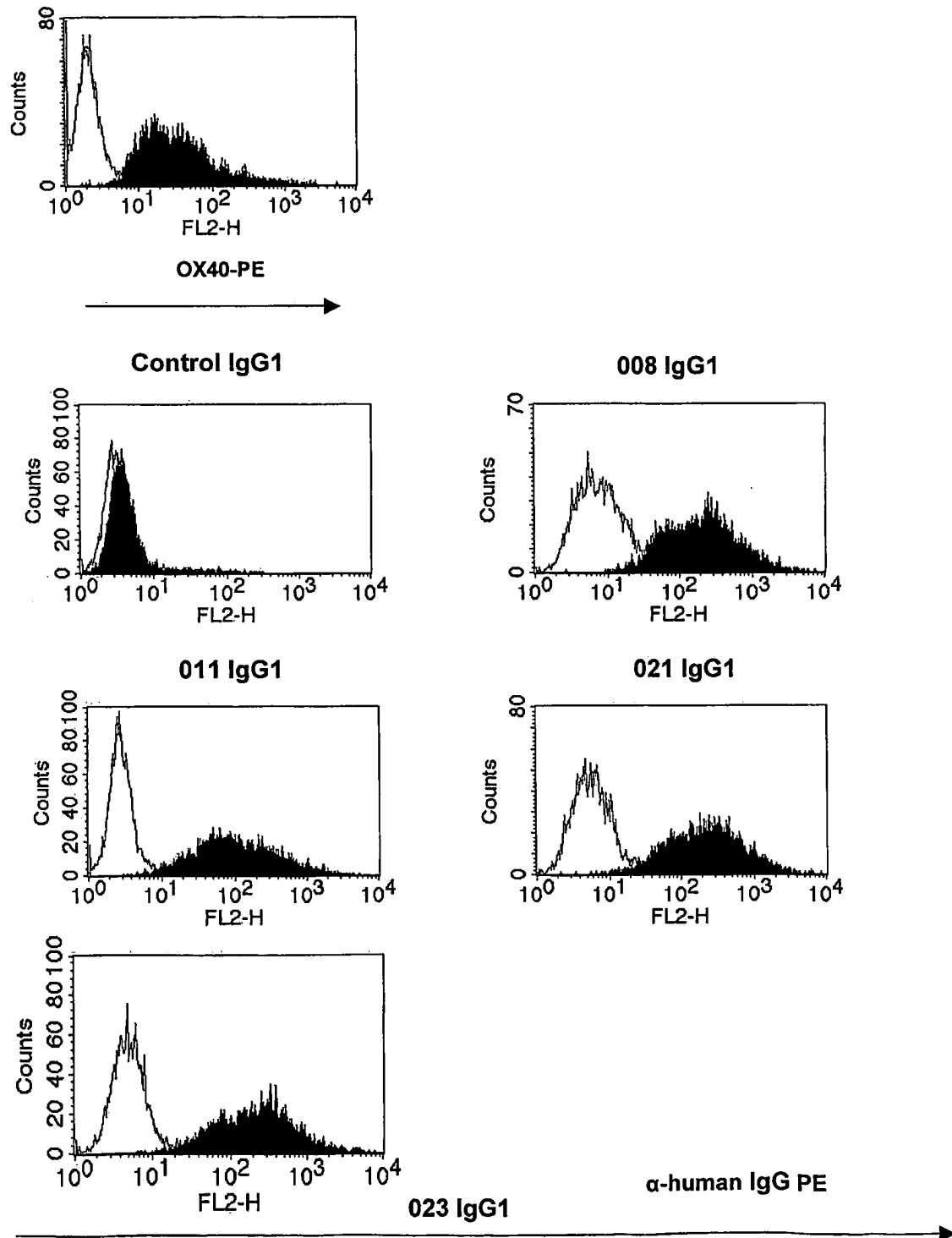


Figure 15